CARLSBAD AVENUES

Let's talk about
BEACHES

Lack of beach sand negatively impacts beach attendance. Studies show that as beaches get narrower, decreased attraction and attendance send recreation and tourist dollars spiraling downward, resulting in lower municipal revenues and thus a lessened ability to provide quality programs and services. Property tax revenues also decrease as the coast becomes a less desirable place to live.

Each year, when residents are polled about what they like best about living in Carlsbad, more than one-third mention the city's proximity to the beach.

You walk on it. Sit on it. Enjoy the ocean view on it. Bury yourself up to your neck in it. Make castles out of it. Let it lazily sift through your fingers on a sunlit afternoon as you contemplate life and consider your good fortune living this close to the ocean.

Sand is so much a part of the beach experience that you take it for granted. **DON'T.**

SandScripts

"Beyond all things is the ocean."

SENECA, ANCIENT ROMAN PHILOSOPHER

Sand and sea are inextricably interwoven. No one wants to sit on cobblestones or make a precarious barefoot journey to the water.

But where does sand come from? Where does it go? Why is it disappearing? How can Carlsbad's six-plus miles of shoreline be protected and its beaches replenished? And what can each of us do to ensure the beauty and cleanliness of our coastal environment?

SandScripts

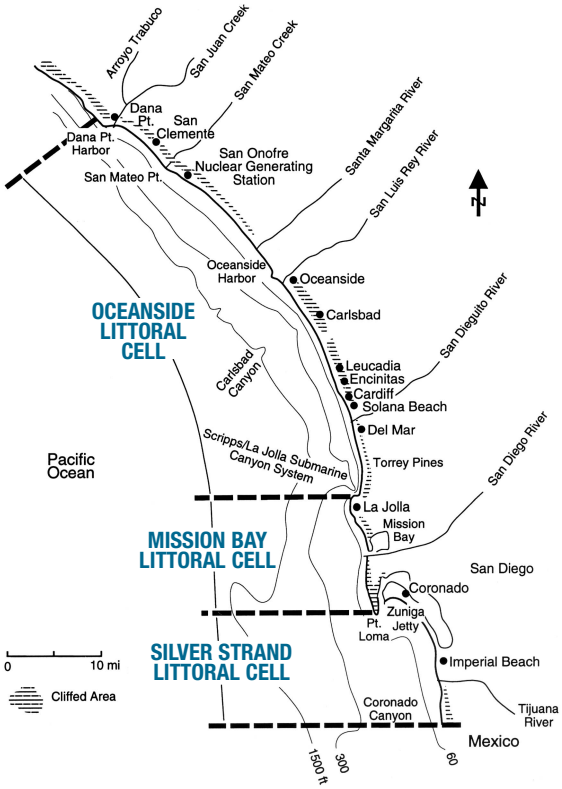
"70% of the world's human population lives within 50 miles of the ocean."

HUBBS-SEAWORLD RESEARCH INSTITUTE

The beach knows no boundaries …

Although we may consider the beach from Oceanside to Encinitas as "our" Carlsbad beach, beaches do not end at city boundaries. The Carlsbad beach lies in the midst of the Oceanside Littoral Cell, which extends from Dana Point to the Scripps/La Jolla Submarine Canyon.

A littoral cell is a self-contained portion of coastline that includes waves, currents, tributary rivers that extend easterly to the top of local mountains, and positive/negative man-made factors that affect the cell's sediment cycle.



What can people do to preserve our beaches?

It is in residents' best interests to support beach preservation efforts, believes Carlsbad Associate Engineer Steve Jantz. "The money spent will pay off financially and in quality of life." He also advises, "Be a good citizen" inland and on the beach.

Inland … Remember that everything washed into a storm drain – like motor oil, debris and other pollutants – comes out in our lagoons and ocean. For detailed information, call the Carlsbad Storm Water Hotline at 602-2799.

On the beach … Don't trash our environment. Cigarette butts, glass, food wrappers and other litter are dangerous to humans and other living things. Enjoy the beach, leaving only footprints when you depart.

Where does sand come from?

Local beaches are supplied with sand primarily through the Santa Margarita, San Luis Rey and San Dieguito rivers during winter rain storms.

Sand moves …

- East to west: Sediment is deposited at rivers' mouths and moves westward to the ocean when it rains.
- North to south and south to north: As wave directions shift, sand transport goes south in the winter (via storms from the north) and north in the summer (via storms from the south).
- Offshore to onshore and onshore to offshore: Waves and tides move sand from shallow water to the shoreline and vice-versa.
- Out to sea: Over thousands of years, the sea has slowly risen. As the sea rises, engulfing more sand, beaches become narrower.

SandScripts

"More than 130 million people use southern California beaches annually, and this adds up to a lot of money."

REINHARD FLICK, SCRIPPS INSTITUTION OF OCEANOGRAPHY RESEARCHER AND OCEANOGRAPHER FOR THE CALIFORNIA DEPARTMENT OF BOATING AND WATERWAYS

The history and future of sand …

"Wide, sandy beaches are not usually a natural feature of southern California," reports writer Chuck Colgan in Scripps Institution of Oceanography's *Explorations* magazine. "Many premier beaches were created, not by nature alone, but largely by human activities. The beaches will be narrower and rockier in the future unless people and governments continue to take action."

In general …

- The progress of sand moving westward to the beach has been impeded by public infrastructure constructed to support city populations. Examples include dams built for water storage and concrete-lined channels constructed for flood control.
- Coastal development has reduced the amount of sand getting to the beach, while construction of harbors and jetties has blocked north-south movement of sand.
- Ironically, development has also nourished beaches with augmented sand from construction. For example, nearly all the sand in Santa Monica Bay is the result of decades of coastal development projects.
- Seawalls block the natural failure of bluffs, preventing sand from eroding onto the beach.
- As development opportunities near the coast disappear and rivers remain channeled and dammed, less beach-making material travels westward.
- This decrease in natural sand delivery, combined with potential severe storms that wash more sand out to sea, could result in a lasting imbalance and consequent shrinkage in beaches statewide.

SandScripts

"The seashore is a rare and important part of the quality of life in San Diego County."

FRANK ALESHIRE, FORMER CARLSBAD CITY MANAGER

In Carlsbad …

- Beaches have remained relatively stable.
- The Encina power plant bi-annually dredges Agua Hedionda Lagoon, putting 0.5 million cubic yards of sand on Carlsbad beaches every two years.
- As a follow-up to the massive, mid-1990s Batiquitos Lagoon Enhancement Program, the California Department of Fish & Game dredges Batiquitos Lagoon every two years, depositing 50,000 cubic yards of sand on Carlsbad beaches.
- The City of Oceanside's annual dredging of the harbor puts sand on the Oceanside beach, which travels southward to Carlsbad beaches.
- The City Council appoints a seven-member citizens' Beach Preservation Committee. The Committee advises the Council on matters related to the protection and enhancement of the Carlsbad shoreline and studies the best means to maintain beaches for the optimum enjoyment of the public.

Two remedies: replenishment and retention

- A local $17 million pilot project (see box), paid for by the U.S. Army Corps of Engineers, California Department of Boating and Waterways, and U.S. Navy, is the West Coast's largest beach nourishment program to date. Sand was suctioned from offshore areas and deposited on 12 countywide beach locations, including two in Carlsbad.
- The project includes monitoring the effect of added sand on the local underwater environment.
- Government agencies are looking at retaining sand by constructing submerged offshore reefs that will cause waves to break farther offshore. This will keep sand from being carried offshore while helping prevent coastline erosion and bluff failures.

$17 million, 17 cities and a whole lot of sand

In Summer 2003, the American Coastal Coalition honored the San Diego Association of Governments (SANDAG) with a "Top Restored Beach Award." The regional planning agency was recognized for its innovative regional beach-nourishment program that placed two million cubic yards of sand on county beaches. SANDAG's project succeeded, concluded California Coastal Coalition executive director, Steve Aceti, because it enticed 17 cities as well as county, state and federal agencies to work together. He told the *North County Times*, "They could have split into factions or gone out on their own, but they stuck together and made sure everyone got some sand."

This spirit of cooperation among agencies and citizens will keep sand on our beaches for future generations to enjoy.

SandScripts

"The inner peace that comes with the quiet contemplation of a beach on a still calm morning … is more reward than most men ever know. … The beaches of the world are cleaned every night and every wave is a masterpiece of originality."

WILLARD BASCOM, FROM "A LAYMAN'S GUIDE TO BEACH EROSION"

Further Information and Involvement

If you would like further information on beach preservation and related topics, we invite you to:

- Contact Associate Engineer Steve Jantz at 602-2738.
- Check out the city's website at *www.ci.carlsbad.ca.us.*
- Visit *scripps.ucsd.edu.*

If you would like to observe and/or participate in the planning process, we invite you to:

- Attend a Beach Preservation Committee meeting, generally held on the second Tuesday of each month at 4 pm in the Carlsbad Faraday Center, Room 173A, 1635 Faraday Avenue.
- Apply for membership on volunteer advisory boards and commissions by calling the City Clerk's office at 434-2808.
- Attend a regularly scheduled City Council meeting, generally held on Tuesdays at 6 pm in the Council Chambers, 1200 Carlsbad Village Drive.
- Call 434-2820 to confirm above dates and times and to get more information on how you can help direct the avenues of your city's policies and programs.

Background information for this AVENUE was provided by Scripps Institution of Oceanography, "A Layman's Guide to Beach Erosion" by Frank Aleshire, and "Local Tax Losses Due to Erosion of North San Diego County Beaches" by Philip King, Ph.D, San Francisco State University.

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